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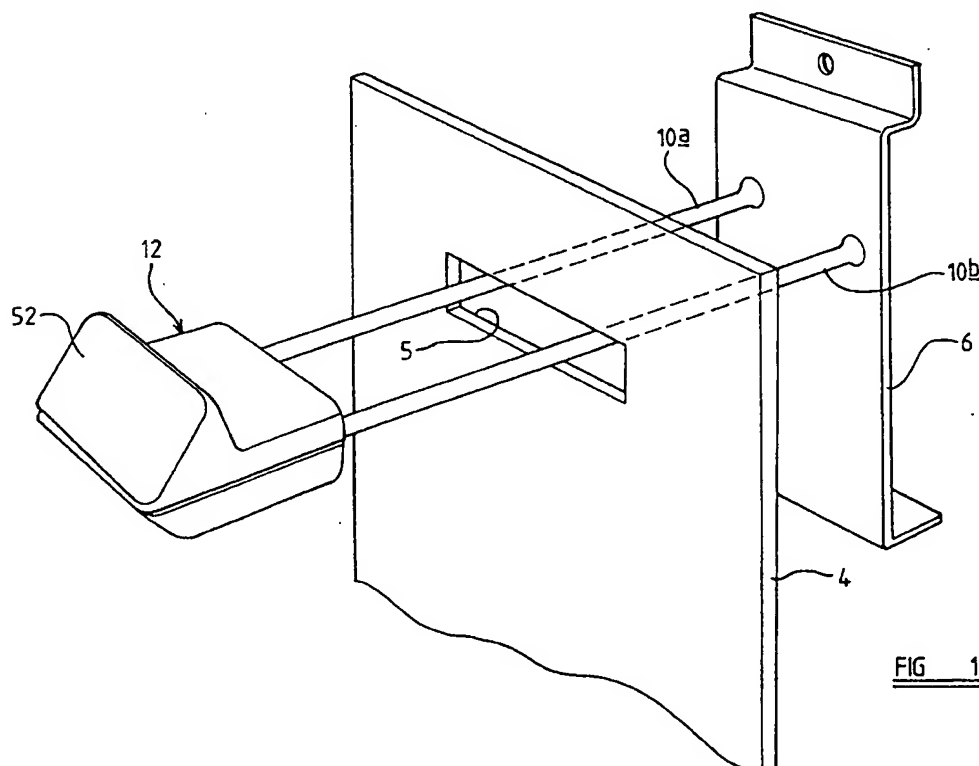
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**(54) Retail supporting device**

(57) A retail supporting device comprises a support member, afforded by parallel arms (10a, 10b), extending from a securing member (6), by which the device may be secured to a support surface such as a display cabinet. At end portions remote from the securing member (6), the supporting arms (10a, 10b) are connected together by an inclined curved portion 10c. In conventional

manner a retail article (4) provided with a slot (5) may be mounted on the supporting device, or displayed to shoppers. To prevent unauthorised removal of a retail article from the supporting member, a locking device (12) is provided, conveniently mounted on the curved end portion of the supporting member (10) which may be released from the supporting member (10) by a key (60) to permit authorised removal of the retail article.

**FIG 1**

## Description

### Description of Invention

[0001] This invention is concerned with retail supporting devices for use in the supporting and display for sale of articles in retail premises, particularly of the kind, hereinafter referred to as being of the kind specified, comprising a securing member such as a bracket which may be secured to a support surface such as a display cabinet, and from which an elongate support member extends generally horizontally.

[0002] Articles to be displayed on such a conventional device may be wrapped in a clear container, for example a blister pack, provided in an upper region thereof with a slot or aperture which may be located over the support member.

[0003] In this manner the article may be displayed at a convenient height-wise level for a customer.

[0004] Conventionally, particularly where the article being displayed is of no great value, a purchaser may slide the article from the support member and take it to a counter, to complete a purchasing operation. By the use of an elongate support member a plurality of articles may be mounted thereon, and when one is removed, the next in line will be displayed for purchase.

[0005] If desired, to avoid accidental removal from the support member, a restraint may be provided, conventionally in the form of a flap which hangs from the end of the support member, adopting in use a position extending at right angles to the length of the supporting member, which in such a position restrains movement of an article from the support member, but which may be lifted easily to a horizontal position in which the article may be removed from the device.

[0006] Alternatively, and particularly where the supporting device comprises parallel support arms, a loop portion joining said arms is inclined slightly upwardly.

[0007] Such retail supporting devices are in widespread use, and are utilised to display for sale packs of articles such as batteries, sweets, etc.

[0008] This system for the presentation of articles for sale in a retail premises has proved highly successful, in that articles may be located at a visually appropriate height, in areas which are otherwise unusable for the display of retail products. Thus, whilst initially the system was utilised for relatively low value products, there is an increasing tendency for them to be utilised in displaying for sale retail items of greater value.

[0009] However, difficulties have been encountered by theft, and shoplifters have been detected sliding a plurality of articles from the supporting device and dropping them into a bag in one swift movement in an attempt to avoid payment.

[0010] Whilst for items of low value this is not regarded as a serious problem, the increasing theft of higher value articles is preventing usage of this system, to the disadvantage of the retail trade.

[0011] According to this invention there is provided a supporting device of the kind specified, comprising locking means to prevent an article displayed thereon being removed.

[0012] Preferably the locking device is mounted on a free end portion of the support member, ie. remote from the securing member, and may conveniently be provided in place of the conventional "flap".

[0013] Where the supporting member comprises parallel arms preferably these are interconnected at end portions remote from the securing member by a loop which may be engaged with the locking device to prevent removal of the locking device from the supporting member.

[0014] Preferably the supporting device comprises a key to permit the locking device to be removed from the supporting member, and to permit an article displayed thereon to be removed, and/or to permit a fresh supply of articles to be mounted thereon.

[0015] Conveniently the locking device comprises a body part mounted for relative movement between open an position, in which the locking device may be removed from the supporting member, and a closed position in which the locking device is retained captive with the supporting member.

[0016] Thus, for example, the locking device may be fitted onto the supporting member by a bayonet-type fitting, for example, the locking device may comprise a bolt having engagement formations which may be moved into locking engagement with complimentary formations on the body part, and the key may be operative to twist the engagement formations into such locking engagement.

[0017] A key for such a locking device may comprise engagement formations which may be moved into engagement with complimentary formations on the locking device in order to twist the bolt in the locking device to enable the locking device to be opened.

[0018] In this manner articles of relatively high value may be displayed on a supporting device in an otherwise conventional manner to permit convenient display of articles for sale.

[0019] It has been found that, once a purchaser has selected such an article for purchase, the necessity for him to request that an attendant unlock the supporting device to enable the article to be removed does not reduce greatly tendency for selection and sale to occur.

[0020] Additionally, whilst the level of security may be low, the existence of the locking device in accordance with the invention prevents the occurrence of opportunistic theft.

[0021] There will now be given a detailed description, to be read with reference to the accompanying drawings, of preferred embodiments of a retail supporting device which have been selected for the purposes of illustrating the invention by way of example.

[0022] In the accompanying drawings:

FIGURE 1 is a perspective view of a first embodiment of an illustrative device, showing an article displayed for sale supported thereby;

FIGURE 2 is a vertical section view of an end portion of the supporting device, showing the interior construction of a locking device thereof;

FIGURES 3a and 3b are perspective views showing the locking device from opposite sides thereof, whilst in its open position;

FIGURE 4 shows a key for use in the opening of the locking device;

FIGURE 5 is a perspective view showing a modified locking device in accordance with the invention;

FIGURES 6a, 6b and 6c are elevational views of a key for use with the modified locking device;

FIGURES 7a, 7b and 7c are elevational or section views of a second embodiment of an illustrative device, having a different type of lock;

FIGURES 8a, 8b and 8c are elevational views of a bolt for use with the locking device of Figure 7;

FIGURE 9 shows a section view of the bolt of Figure 8 when inserted into the embodiment of Figure 7.

[0023] The retail supporting device which is the first embodiment of this invention comprises a securing member in the form of a bracket 6 which may in conventional manner be secured in any convenient location, such as on a display cabinet, wall, counter or the like, the device comprising a supporting member comprising parallel supporting arms 10a, 10b extending when the device is located in its normal position generally horizontally, as shown in Figure 1, connected together by a curved end portion 10c. Releasably secured to the end portion of the supporting member remote from the securing member 6 is a locking device 12, comprising first and second body parts 14, 16 mounted for relative movement about a live hinge 18 between open positions, shown in Figure 3, and closed positions, shown in Figures 1 and 2.

[0024] The first body part 14 is provided on its underside with a recess 30, two apertures 32a, 32b extending through an end wall of the body part into the aperture 30. Extending through an outer face of the body part is an aperture 34, and surrounding the aperture on the interior side is a circular boss 36. On the exterior side the boss 36 provides a circular shoulder 38.

[0025] The second body part 16 is provided on its interior surface with three resilient locking formations 40a, 40b and 40c, provided with outwardly-facing hooked portions 42, so arranged that when the second body part 16 is moved about the hinge 18 towards and into engagement with the first body part 14, the chamfered outer faces of the hooked portions 42 engage with the interior surface of the boss 36, resiliently deforming the locking formations towards one another, as the locking formations pass through the centre of the boss.

[0026] Further movement of the body part 16 causes the hooked portions 42 of the locking formations 40 to

pass completely through the aperture 34 of the body part into the position shown in Figure 2, in which the hooked portions 42 spring outwardly behind the shoulder 38; to lock the second body part in its closed position relative to the first body part.

[0027] Provided on the opposite side of the second body part is an abutment 50, which may conveniently be provided on an inclined outwardly-facing surface 52 thereof with a logo, descriptive text or price. Provided on the underside of a supporting web of the abutment 50 is a part-circular recess 54 (see Figure 2).

[0028] With the locking device in its open position, the first body part 14 may be located over the end portion of the support member 10, with the curved part 10c of the support member extending around the boss 32, as shown in dotted lines in Figure 3b. The second body part 16 may then be moved to its closed position, shown in Figure 2, in which the locking device is securely fastened to the end portion of the support member, with the support member extending partially around the boss 36, and being located by the recess 54 provided in the underside of the second body part 16.

[0029] Preferably the height of the abutment 52 is greater than the depth of the slot 5 provided in the article 4 to be displayed for sale, to prevent the article from being removed from the supporting device when the locking device is securely affixed to the supporting member, as shown in Figure 1.

[0030] When it is desired to release the locking device from the supporting member, a key 60, comprising a hand grip portion 62 and an operative portion 64, may be utilised to release the locking formation to permit the locking device to be removed from the supporting member. The operative portion 64 is conveniently generally cylindrical, comprising a chamfered circumferential surface 66 which may be inserted into the boss 36 from the exterior side thereof, to engage with the chamfered faces 42 of the locking formations 40, resiliently to deform the locking formations to enable them to be retracted from the first body part 14, and the body parts moved relative to one another into their open positions. In these positions the locking device may readily be removed from the supporting member, and items for sale may be mounted or removed from the supporting device.

[0031] In this manner articles of relatively high value may be displayed on the supporting device in an otherwise conventional manner to permit convenient display of articles for sale.

[0032] In a modified form of the locking device, shown in Figure 5, in which similar numerals have been utilised, extending into the first body part is a recess 34a, in an end face of which three rectangular apertures 38a, 38b and 38c are provided. These apertures 38, in conjunction with the floor of the recess 34a, provide shoulders with which the locking formations 40a, 40b and 40c may be engaged, to retain the locking device in its closed position.

[0033] Figures 6a, 6b and 6c show a key 60a for un-

locking the locking device, comprising a hand grip portion 62a from which three fingers 64a, 64b and 64c extend in a generally axial direction, so constructed that when the key is moved into the recess 38a (Figure 5) the fingers 64 engage the chamfered end portions of the hooked portions 42, camming them away from the shoulders, and allowing the locking device to be opened.

[0034] In the modified construction above described, conveniently the hooked portions 42, not shown in Figure 5, engage with the flat surface of the recess 34a on the radially inward sides of the slots 38a.

[0035] The retail supporting device which is the second embodiment of the invention is shown in Figure 7, and is generally similar to the previous embodiment except for the features which will now be described. The retail supporting device comprises a locking device 70 which has two circular plates 72, 74 which define apertures 76, 78 in the locking device and engaging formations 80, 82 in the apertures. The engaging formations 80, 82 are shaped to enable a correspondingly shaped head of a bolt 88 to be located in the aperture, shown in Figure 8.

[0036] As shown in Figure 7a, the engaging formations 80 in the first plate 72 are off-set at 90° from the engaging formations 82 in the second plate 74. Thus when the two body parts are moved to their closed positions, the formations are in face-to-face contact. Thus the bolt 88 may be passed through the first plate 72, and through the second plate 74. The bolt 88 is then twisted through 90° to secure the two portions 71, 73 of the supporting device 70 together. The detail of the various formations on the bolt which provide a bayonet-type fitting are shown in Figure 8. The bolt 88 has a head 90 and an engaging tip 92, separated by a shaft 94. Engaging formations 96, formed on the tip 92 project outwardly from the shaft 94. The engagement formations are positioned opposite each other so that the effective diameter of the tip 92 is much wider over the part of its circumference.

[0037] Thus in a locking operation of the device the tip is moved through the apertures. When the bolt 88 is twisted the engaging formations on the bolt slide under the engaging formations 80, 82 on the locking device so that the bolt 88 cannot slide out.

On the head of the bolt 90 a hexagonal well 98 is defined having a cylindrical shaft 100 projecting from its centre. These formations provide engagement which an appropriately shaped key (not shown) could engage with and twist such a key would, essentially comprise a hexagonal shaft with a central cylindrical well into which the shaft 100 on the head of the bolt could fit. Such a key could easily be used to turn the bolt 88.

[0038] The secured locking device is shown in Figure 9. The first body portion 71 has a recess 102 into which the head of the bolt 88 fits. A cover plate 104 may be fitted over the base of the locking device 88 into a recess formed in the second body part 73 to prevent tampering

with the base of the locking device.

[0039] In the present specification "comprise" means "includes or consists of" and "comprising" means "including or consisting of".

[0040] The features disclosed in the foregoing description, or the following claims, or the accompanying drawings, expressed in their specific forms or in terms of a means for performing the disclosed function, or a method or process for attaining the disclosed result, as appropriate, may, separately, or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

## 15 Claims

1. A supporting device of the kind specified comprising locking means to prevent an article displayed thereon being removed.
2. A supporting device according to claim 1 wherein the locking device is mounted on a free end portion of the support member.
3. A supporting device according to claim 2 wherein the locking device is provided in place of the conventional "flap".
4. A supporting device according to any one of the preceding claims wherein the supporting member comprises parallel arms interconnected at end portions remote from the securing member by a loop which is engaged with the locking device to prevent removal of the locking device from the supporting member.
5. A supporting device according to any one of the preceding claims comprising a key permitting the locking device to be removed from the supporting member, and to permit an article displayed thereon to be removed, and/or to permit a fresh supply of articles to be mounted thereon.
6. A supporting device according to claim 5 wherein the locking device comprises a body part mounted for relative movement between open positions, in which the locking device may be removed from the supporting member, and a closed position in which the locking device is retained captive with the supporting member.
7. A supporting device according to a claim wherein the body part of the locking device is secured onto the supporting member in its closed position by a bayonet-type fitting.
8. A supporting device according to claim 7 wherein the locking device comprises a bolt which has en-

gement formations which may be moved into locking engagement with complimentary formations on the body part, and the key is operative to turn the bolt to permit the locking device to be opened.

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9. A supporting device according to Claim 8 wherein the locking device is operated by a key comprising engagement formations which may inter-engage with corresponding formations on the bolt to turn the locking device.

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10. Any novel feature or novel combination of features hereinbefore described and/or shown in the accompanying drawings.

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**Amended claims in accordance with Rule 86(2) EPC.**

7. A supporting device according to Claim 6 wherein the body part of the locking device is secured to the supporting member in its closed position by a bayonet-type fitting.

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8. A supporting device according to claim 7 wherein the locking device comprises a bolt which has first engagement formations which may be moved into locking engagement with complimentary formations on the body part, and the key is operative to turn the bolt to permit the locking device to be opened.

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9. A supporting device according to Claim 8 wherein the locking device is operated by a key comprising engagement formations which may inter-engage with corresponding second formations on the bolt to turn the locking device.

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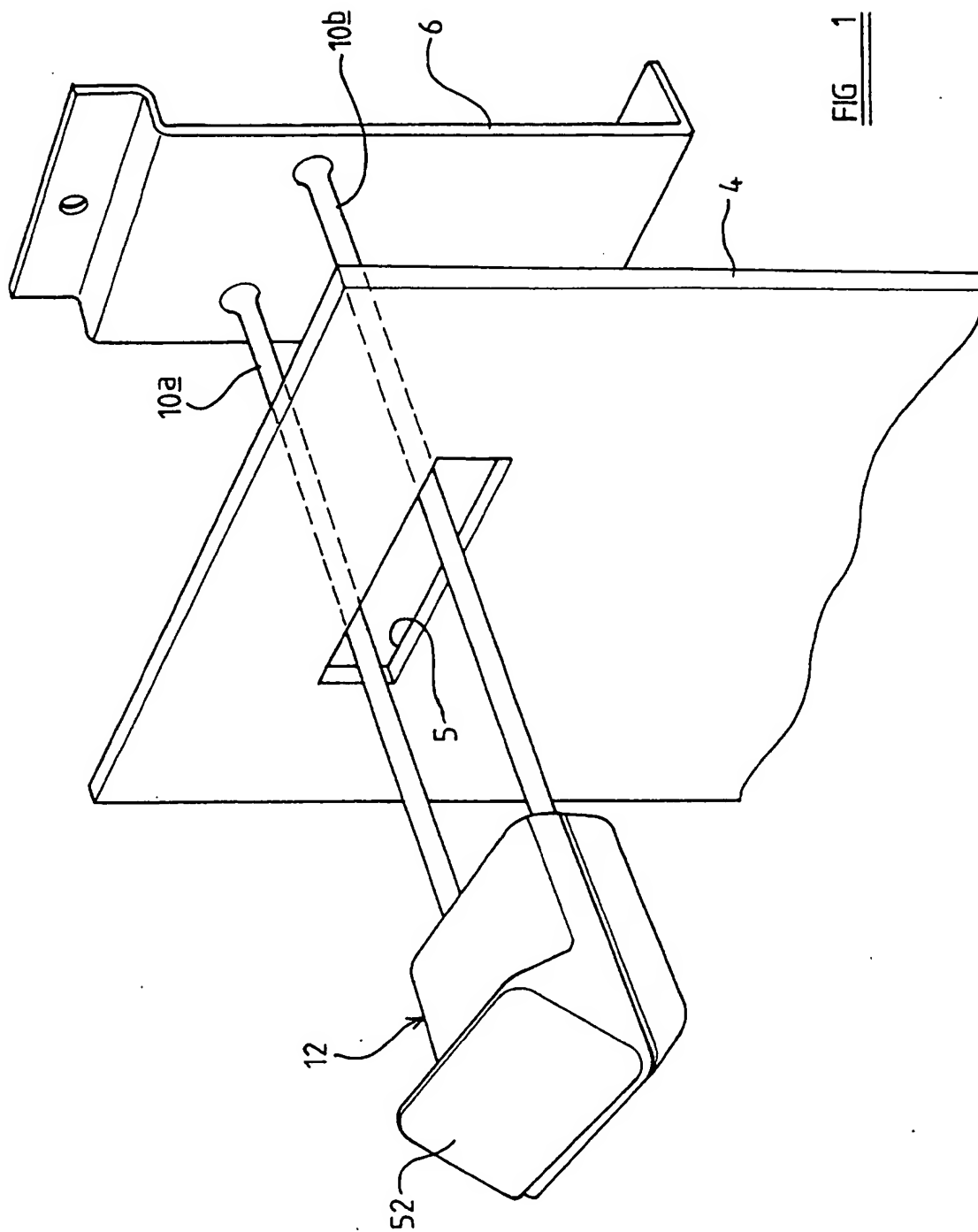
10. A supporting device according to Claim 9 as dependent on Claim 4 in which the first engagement formations on the bolt are positioned opposite each other and project outwardly from a central shaft of the bolt; the second engagement formations on the bolt project from a well formed in the head of the bolt; and in which the bolt projects through the loop formed in the securing member.

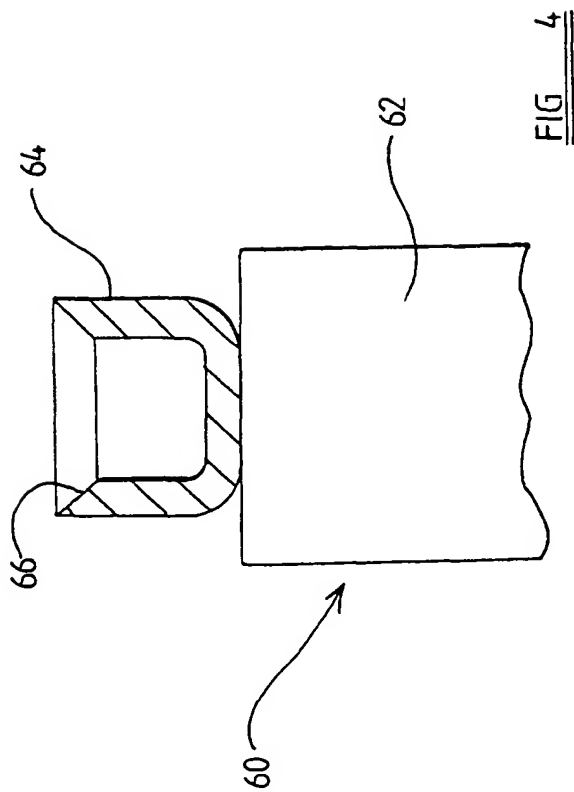
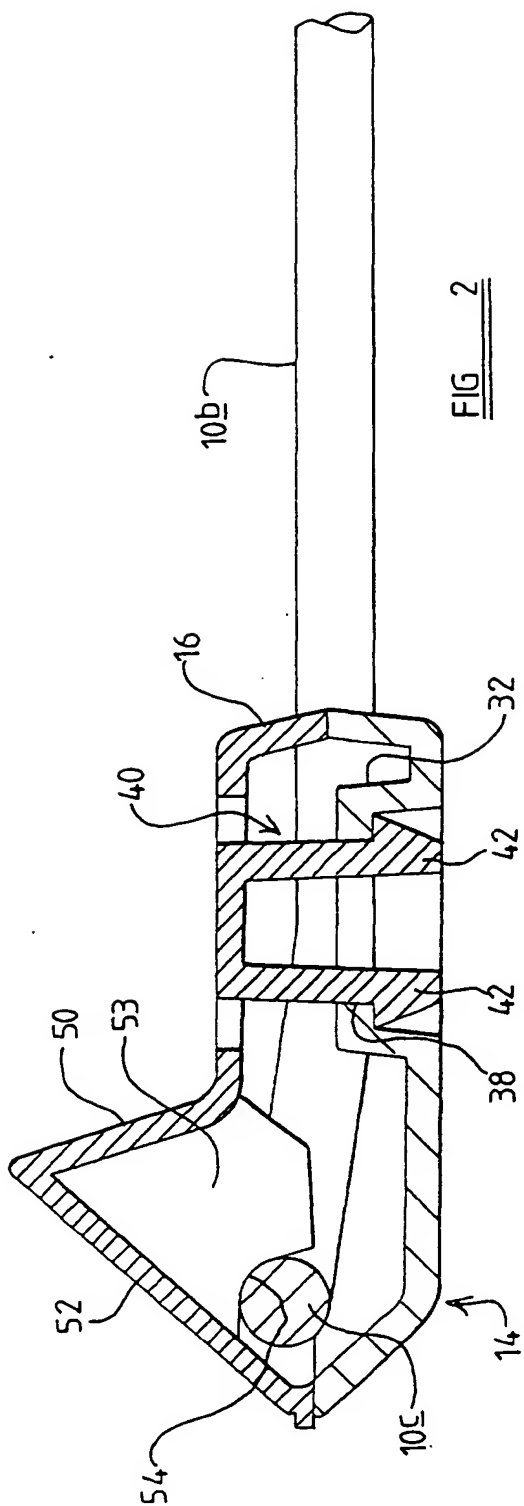
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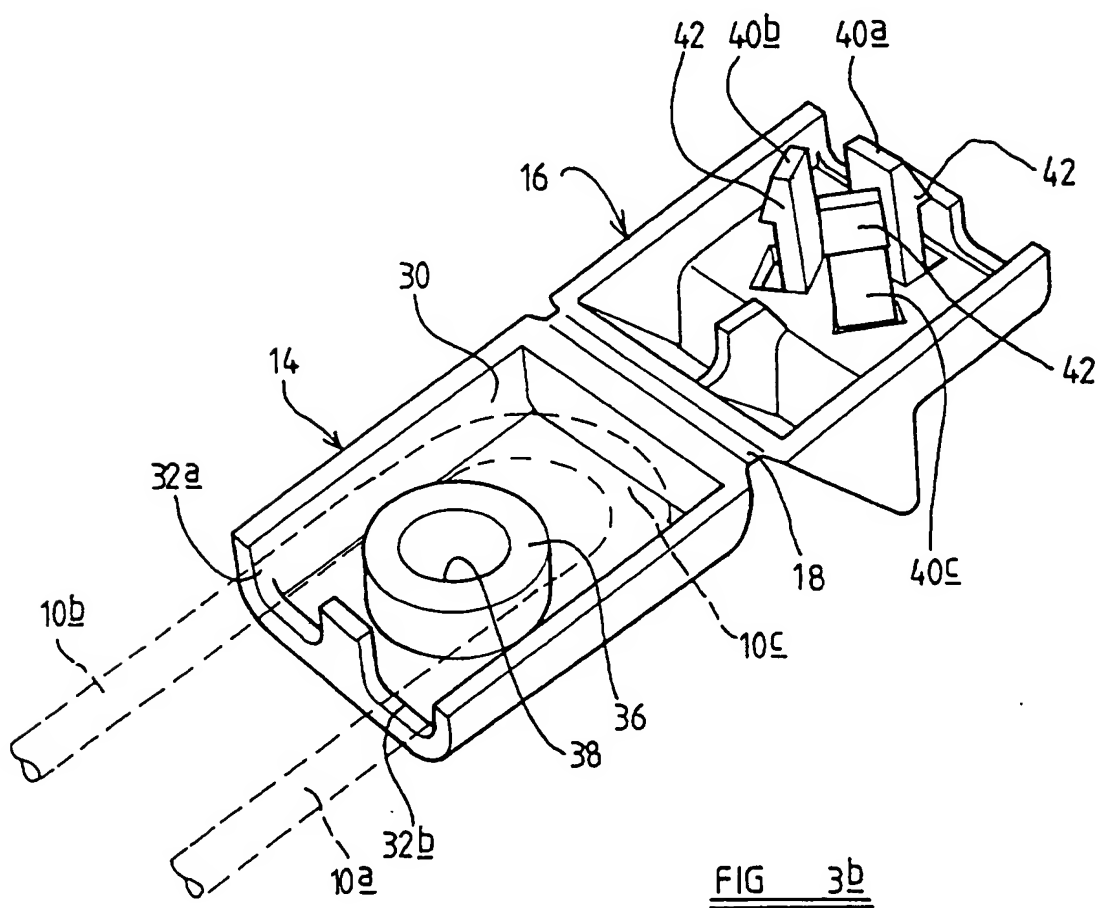
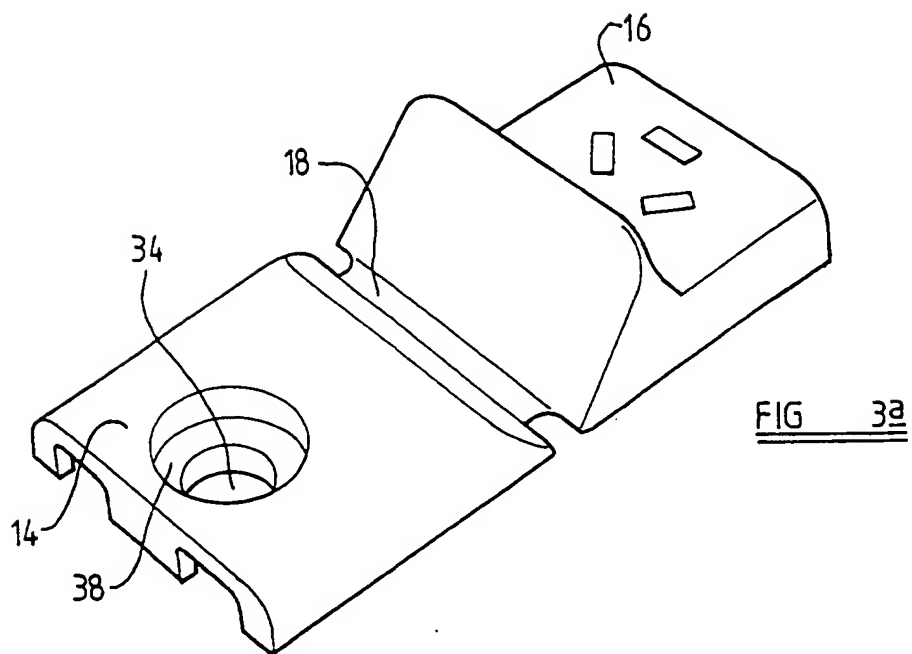
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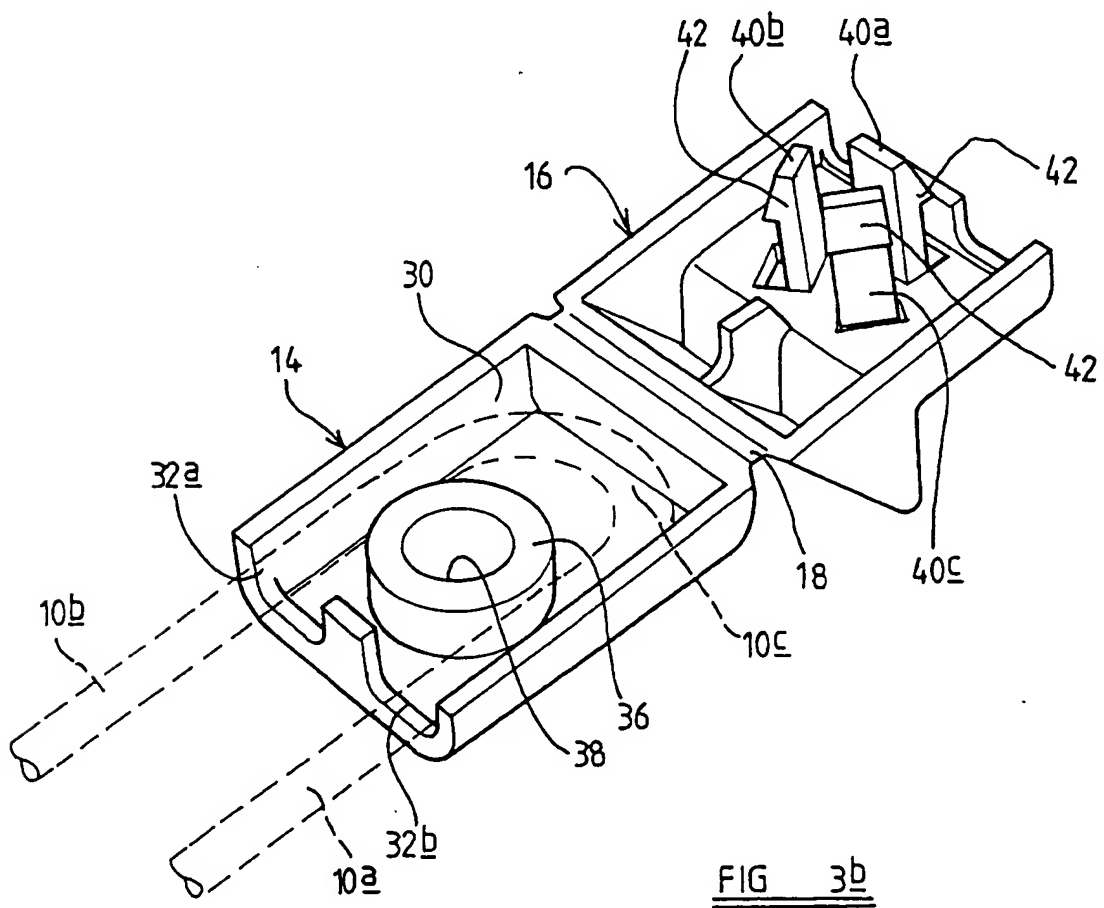
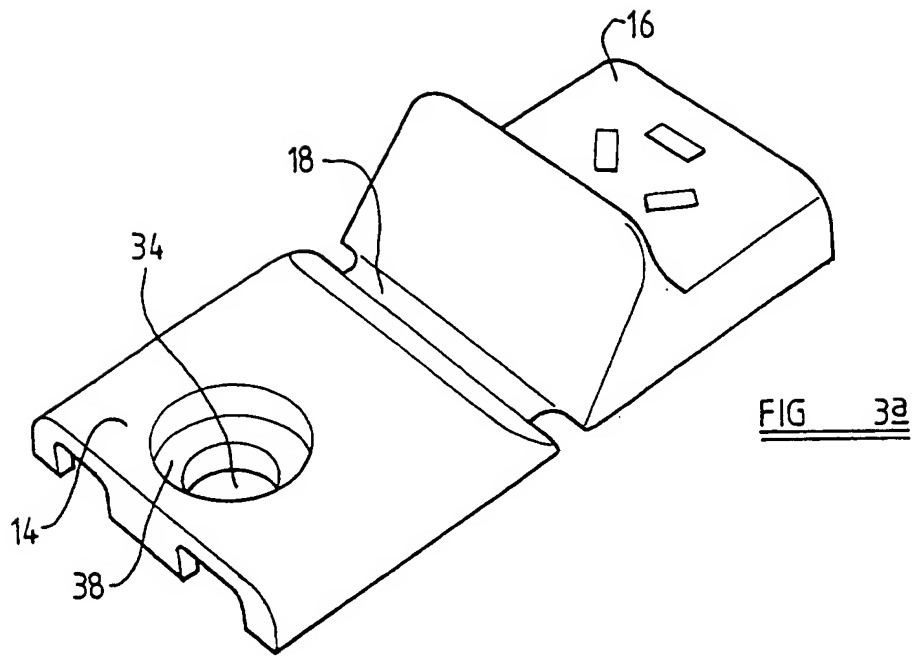
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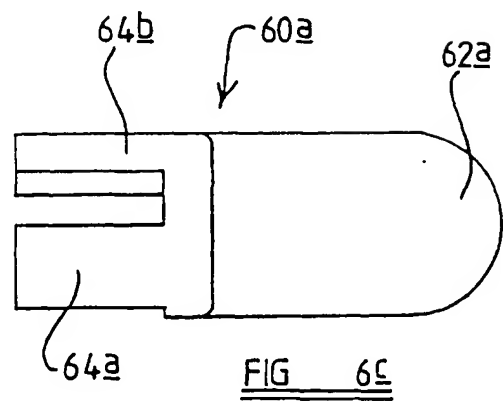
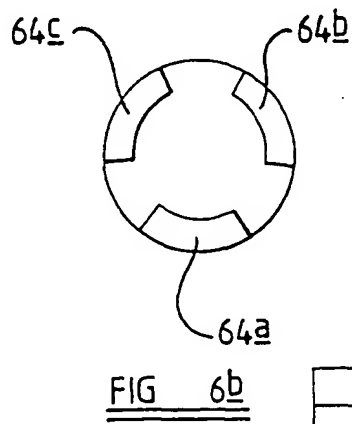
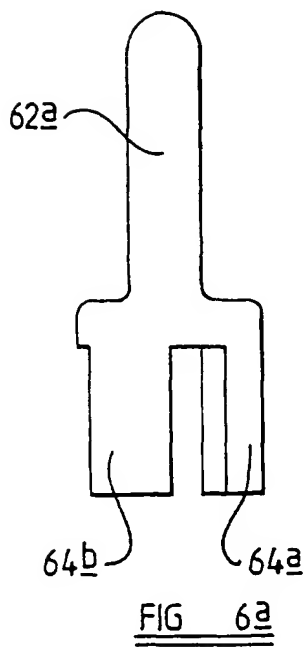
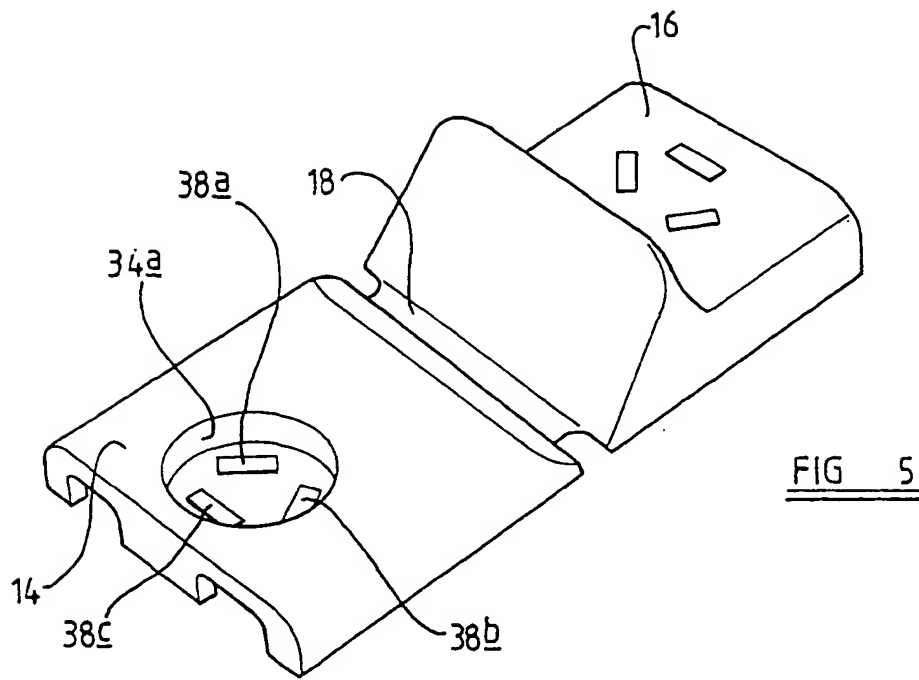












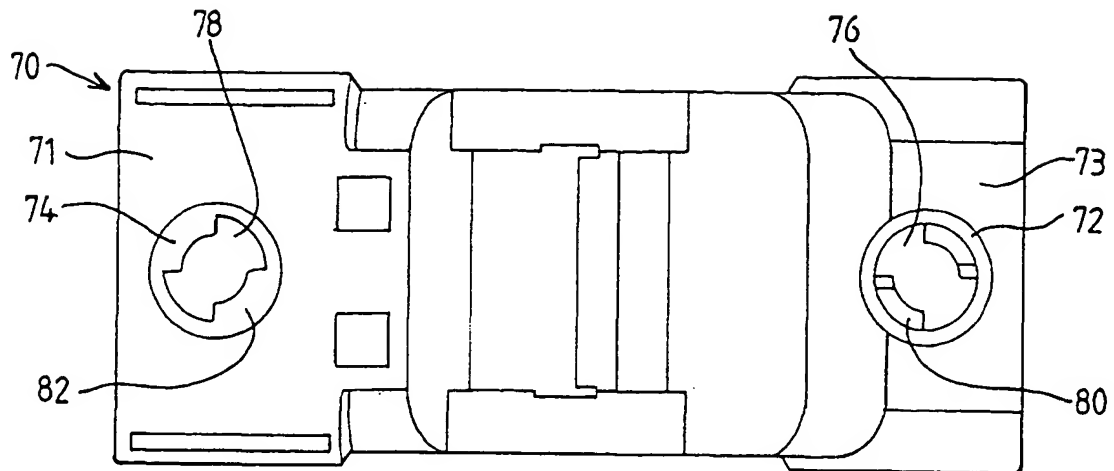


FIG 7a

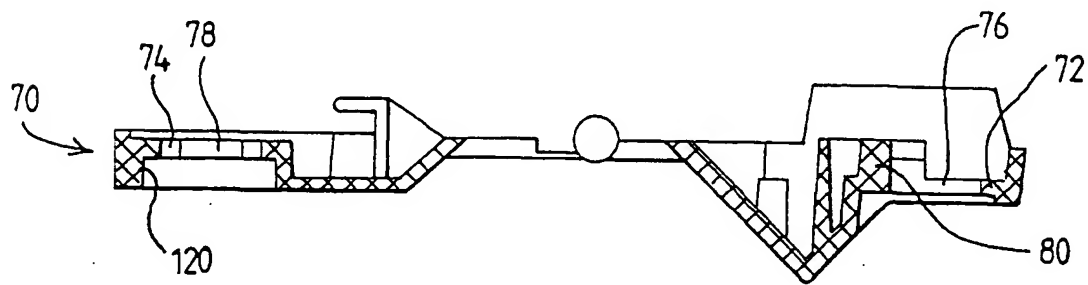


FIG 7b

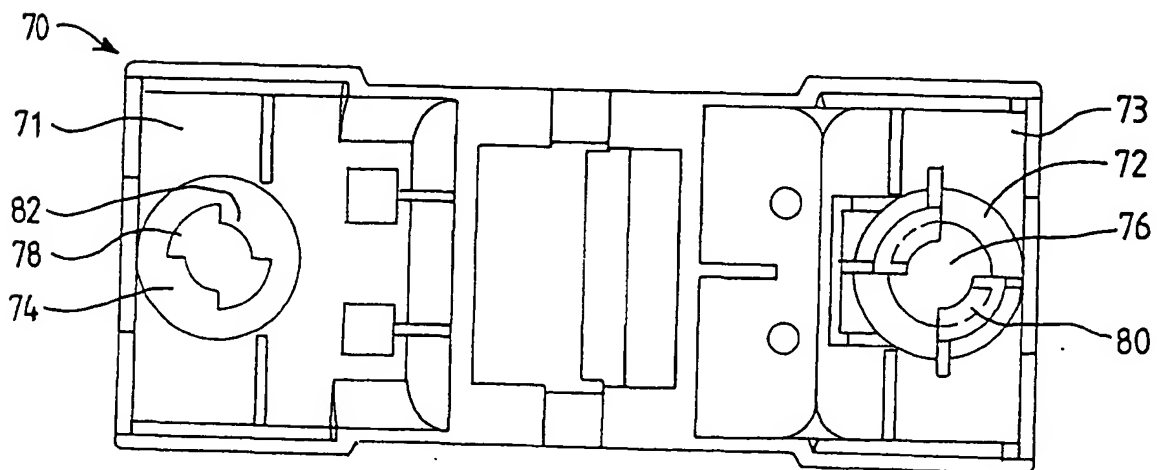


FIG 7c

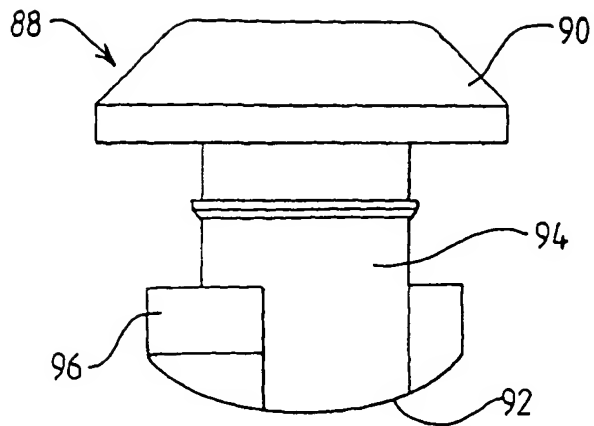


FIG 8a

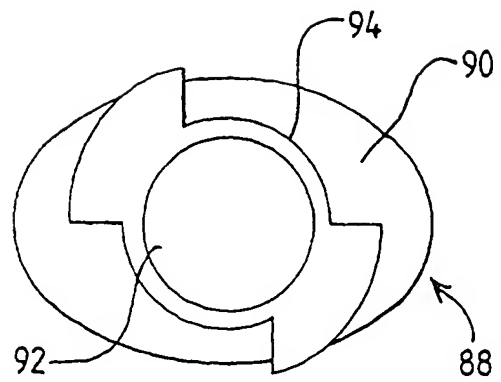


FIG 8b

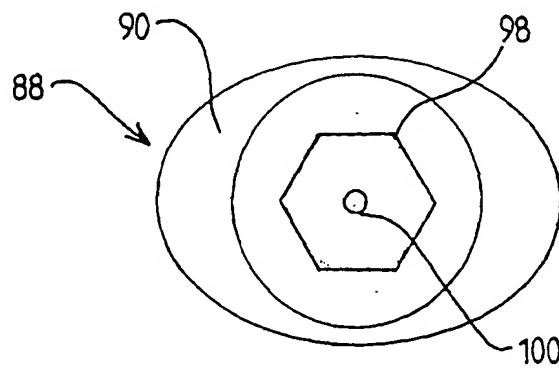
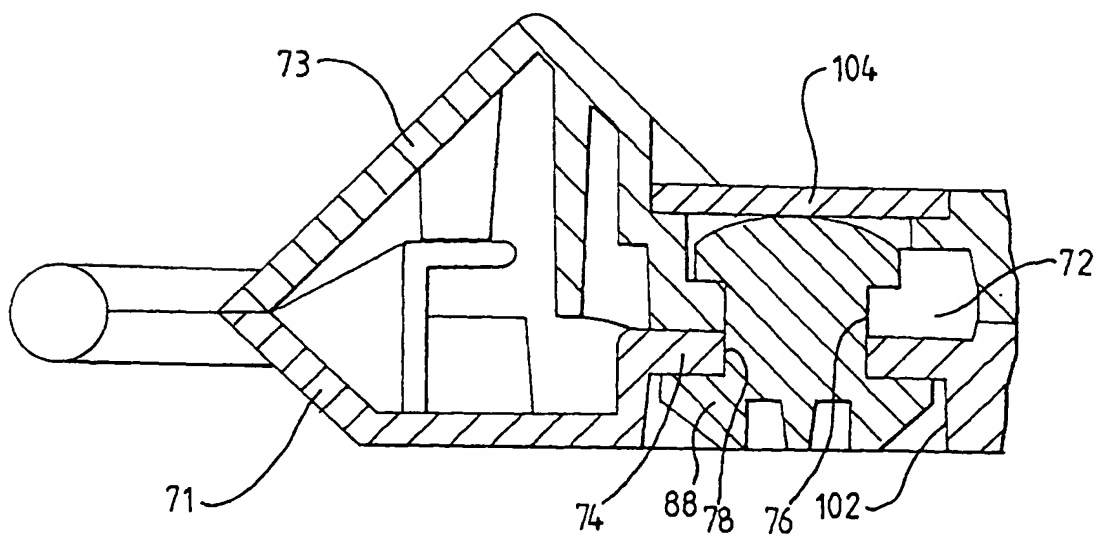


FIG 8c

FIG 9





European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 01 12 5005

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document: with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IntCl.7)
X	US 5 275 027 A (FERNANDEZ ROGER L ET AL) 4 January 1994 (1994-01-04) * abstract; figures *	1-3,5,6,10	A47F5/08
X	US 5 027 622 A (HATCH J MEL ET AL) 2 July 1991 (1991-07-02) * the whole document *	1-3,5-10	
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The present search report has been drawn up for all claims			<p>TECHNICAL FIELDS SEARCHED (Int.Cl.7)</p> <p>A47F</p>
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>18 January 2002</b>	Examiner <b>Pineau, A</b>
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# **ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.**

EP 01 12 5005

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-01-2002

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82